

## **System and Method For Medium Wide Band Communications by Impulse Radio**

### ***Abstract***

A system and a method for medium wide band communications using  
impulse radio techniques. The method of transmitting medium wide band signals  
includes the steps of producing a sinusoidal signal and a train of preferably  
Gaussian shaped pulses. The method also includes the steps of multiplying the  
sinusoidal signal by the train of pulses to produce a train of sinusoidal bursts, and  
transmitting the train of sinusoidal bursts. The center frequency of the  
transmitted signal consisting of the train of sinusoidal bursts can be controlled by  
selecting an appropriate frequency of the sinusoidal signal. The bandwidth of the  
transmitted signal can be controlled by selecting an appropriate width of the  
pulses in the train of pulses. Information and/or coding modulation can be  
accomplished by adjusting the time position and/or phase of the sinusoidal bursts.